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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/675,940

10/02/2003

Satoru Takizawa

723-1431

5893

27562

7590

06/29/2007

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EXAMINER

JANKUS, ALMIS R

ART UNIT

PAPER NUMBER

2628

MAIL DATE

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/675,940

**Applicant(s)**

TAKIZAWA ET AL.

**Examiner**

Almis R. Jankus

**Art Unit**

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/02/03</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. Claims 1-22 are presented for examination.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sangwine in view of Miller and further in view of Atherton et al.

With respect to claim 1, Sangwine teaches the claimed light source setting section for setting, in the game space,  $n$  light sources (where  $n$  is an integer equal to or more than 2) for irradiating the object with a light beam; a brightness calculating section for calculating, for each of predetermined units forming the object, a brightness vector having as components  $n$  illumination intensities respectively added by the  $n$  light sources; a threshold value storage section having threshold values of the  $n$  illumination intensities stored therein, at section 3 and at figures 3 and 4, the "game space" being the RGB color space, the " $n$  light sources" being the individual color components (R, G, B), the "brightness vector" being the luminance, the RGB color space being an additive color space; the threshold values being used for dividing a coordinate region for the brightness vector into at least three regions, the claimed threshold values being the maximum values of each color component, usually 255; a region determining section for determining, for each of the predetermined units, a region including a tip of the brightness vector calculated by the brightness calculating section from among the regions obtained via division by the threshold values based on relationships in size between the  $n$  illumination intensities and their corresponding threshold values, which is taught at Miller as the axes of the color space being normalized to 1, normalization is calculated by dividing a component value by the maximum component value (usually 255) thereby resulting in component values ranging from 0 to 1; and a display color determining section for determining a display color for each of the predetermined units

based on the region determined for each of the predetermined units by the region determining section, as generating a resulting color from the individual components; such that the object's display color distinctly varies, which is taught at Atherton et al. at the last paragraph of page 278 which continues at the top of page 281 which teaches coloring polygons (the claimed "predetermined units") such that the shadowed surfaces utilize darker gray range of the gray scale than that used for the lighted surfaces. To produce a color image, the same type of intensity scale is applied to the particular ratio of basic hues (red, green and blue) defining the color. The ratio of the primary hues used remains the same and only the intensity varies. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the various references because they (in combination) teach well known fundamentals of using the RGB color space and its applications to varying colors and intensities with respect to polygons.

Claim 2 further requires the game apparatus according to claim 1, wherein: the light source setting section sets a first light source emitting a light beam of a first color, and a second light source emitting a light beam of a second color which is different from the first color; the brightness calculating section calculates, for each of the predetermined units forming the object, a brightness vector composed of the illumination intensities corresponding to values of color components of the first and second colors; and the region determining section determines the region including the tip of the brightness vector by determining a relationship in size between the value of

the color component of the first color and its corresponding first threshold value, and a relationship in size between the value of the color component of the second color and its corresponding second threshold value. The rationale provided above for the rejection of claim 1 applies to claim 2 as well.

Claim 3 further requires the game apparatus according to claim 2, wherein: the first color is either one of red, green, or blue; and the second color differs from the first color, and is either one of red, green, or blue. Sangwine teaches this as the RGB color space.

Claim 4 further requires the game apparatus according to claim 2, wherein: the coordinate region is divided into different regions by the first threshold value, and is further divided into different regions by the second threshold value; and the display color determining section determines display colors of different brightness in accordance with the regions obtained by division by the first threshold value, and determines display colors of different types in accordance with the regions obtained by division by the second threshold value. The rationale presented above for the rejection of claim 1 applies in that the different regions correspond to the component axes of the RGB color space, the axes being normalized by division.

Claim 5 further requires the game apparatus according to claim 4, wherein the display color determining section determines, in accordance with the regions obtained

by division by the second threshold value, either a color used for representing an object influenced by a special effect generated in the game space or a color used for representing an object in the case where no special effects are generated. Atherton et al. teaches presenting shadows on polygons, however, polygons which are exposed to a light source are not in shadow and thus not specially effected.

Claim 6 further requires the game apparatus according to claim 5, further comprising a special effect determining section for determining whether the special effect is generated in the game space, wherein the light source setting section provides the second light source only when the special effect determining section determines that the special effect has been generated. Atherton et al. teaches generating shadows as a special effect.

Claim 7 further requires the game apparatus according to claim 1, further comprising a display color storage section having basic display colors stored therein, the basic display colors being used for determining the display color of each object, wherein the display color determining section determines the display color based on the region determined by the region determining section and the basic display colors stored in the display color storage section. Sangwine teaches storing the basic RGB.

Claim 8 further requires the game apparatus according to claim 7, wherein: the region determining section represents a determined region by a numerical value; and

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the display color determining section determines the display color by performing a predetermined calculation using the numerical value representing the region determined by the region determining section and color data for the basic display colors. Sangwine teaches using numeric values for the colors.

Claim 9 further requires the game apparatus according to claim 1, wherein the predetermined units are polygons forming the object. Atherton et al. teaches polygons.

The rationale presented above applies to the remaining claims with respect to similar respective features. Claims 10, 12 and 21 are similar to claim 1; claims 2-8 are similar to claims 13-19 respectively; claims 11, 20 and 22 are similar to claim 9.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R. Jankus whose telephone number is 571-272-7643. The examiner can normally be reached on M-F, 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJ



ALMIS R. JANKUS  
PRIMARY EXAMINER